

## Sample Task Order 3

### Rotorcraft Sizing and Concept Design Analysis

#### Statement of Work

##### I. Overview

The contractor will provide a sizing assessment and concept design analysis of a large, 100-passenger rotorcraft intended for civilian passenger transport for intercity transportation needs in 2030. The contractor will pursue the conceptualization of two classes of aircraft concepts, a conventional edgewise helicopter aircraft concept and a tilting propeller aircraft concept. No minimum airspeed, range, or payload (other than the ability to carry 100 passengers) requirements are imposed. Yet the contractor shall select aircraft concepts that would likely be commercially feasible, including development and operating costs.

##### II. Statement of Work

The contractor will select a helicopter aircraft concept configuration and a tilting propeller aircraft concept configuration. The vehicles selected for design, analysis and modeling will be approved by the Government within 45 days of task initiation. It is expected that the vehicles will be developed through concept design so assumptions of aircraft performance can be judged in light of emerging new technologies.

The contractor will fully size the two aircraft concepts and characterize the estimated performance characteristics of each aircraft for a typical civilian transport mission where vertical take-off and landing is required.

The contractor will develop a complete main rotor(s)/air vehicle model for the selected/approved vehicle. The model will be similar in fidelity to other comprehensive analysis models used within the Government and industry (RCAS, CAMRADII, UMARC, COPTER, CHARM, TECH-02,...). The contractor will provide a validated input deck for each configuration selecting either an RCAS, CAMRADII, or UMARC input format.

##### III. Government Furnished Equipment

The Government will provide the RCAS analysis code together with full documentation, if required.

##### IV. Deliverables

The contractor shall provide an initial assessment report of the two selected aircraft concepts within 30 days of task initiation. The Government will provide approval of the selected configurations with 45 days of task initiation or recommended changes to the selected configurations.

A final report describing work completed including vehicle performance and mission capability for the two selected configurations will be prepared. Design substantiation data including a weights breakdown, plots and tables of geometric and structural property definitions, calculated rotor structural frequencies with rotor speed, and predicted blade loads and control loads will be provided. Complete script files and computer modeling input definitions for the RCAS/CAMRADII/UMARC modeling will also be provided.

V. Schedule

The contractor will request for approval the selected air vehicle for modeling and analysis within 30 days of task initiation. The final data and analysis report shall be delivered to the Government within 120 days of task initiation.